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A Job Element Examination for State Troopers



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A JOB ELEMENT EXAMINATION FOR STATE TROOPERS

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A JOB ELEMENT EXAMINATION FOR STATE TROOPERS

Background

Police examining is not a new concern of the Federal government. In 1922, the U.S. Civil Service Commission used a situations test to select candidates for police work, assessing their judgment in handling hypothetical police situations (Assembly of Civil Service Commissions, 1924). Fifty-three years later two Commission staff members served as part of a consultant team to develop another situations test for police, this time for the job of New York State Trooper. Many other police examinations have been developed by the Commission over these five decades. How has our examining methodology changed during these years? What kinds of nontechnical considerations currently have a bearing on who will be hired to perform this socially significant job?

As psychologists now develop and document examinations--especially for police and firefighter agencies with an underrepresentation of minorities and women--they work as part of a real or imagined interdisciplinary team that may eventually involve

attorneys and judges. And to make matters even more complex, recurring economic concerns, such as the supply and the demand for jobs and budget crises facing public agencies, compete with technical judgments in determining which selection procedures will be used, and how these procedures will be used.

The purpose of this paper is to highlight how Primoff's job element method (Primoff, 1975; Hardt, Eyde, Primoff, and Tordy, 1981) has been used in a project to select police. This paper will focus primarily on the Situations Test, a written examination developed for this project, on which minority group members tended to score substantially lower than the white candidates. In an earlier paper (Eyde, Hardt, and Primoff, Note 1) on women in police work, findings were presented on the Physical Performance Test, and the relevant results will be summarized in this paper. Steps taken to assure equal opportunity for minority group members will be reported, along with the impact that economic concerns had on affirmative action efforts and other aspects of the selection process.

This report is based in part on a paper presented at the 1977 Convention of the American Psychological Association, Division 14, the Division of Industrial and Organizational Psychology, for the symposium on "Alternative Choices in Job-Related Police Examining: What's the Correct Answer?" San Francisco, California, August 30, 1977. The report relates to a project supported by the Law Enforcement Assistance Administration of the U.S. Department of Justice (LEAA Contract C-66465) and the New York State Division of Criminal Justice Services (DCJS Proposal No. 1279-A). The contents of this report are the responsibility of the authors and do not represent the official position of the Law Enforcement Assistance Administration.

The research and development project was under the general supervision of the New York State Police Deputy Superintendent Warren B. Surdam and was carried out by Captain George R. Tordy and members of the Job Analysis Detail.

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Job Element Method

The job element method has had wide application in employee selection in Federal, State and local agencies. It is the sole examining method used for selecting Federal blue-collar workers, but since its inception it has also been utilized to select white-collar workers (Primoff, 1957). The method identifies job elements, the fundamental units describing critical worker requirements, and excludes the use of general credentials and standards, such as the high school diploma and height and weight requirements, as elements. The procedure may be used to provide the foundation for many aspects of a job-related personnel system, including recruiting, examining, training, and performance appraisal.

The method has evolved under the guidance of Ernest S. Primoff, who was introduced to the underlying concepts by Carroll L. Shartle (Primoff, Note 2), an early leader in the development of job analysis.

The origins of the element concept can be traced back to the early history of psychology. For example, Wilhelm Wundt, who one hundred years ago established the world's first psychological laboratory in Leipzig, urged that we "remember the rule, valid for psychology as well as for any other science, that we cannot understand the complex phenomena, before we have become familiar with the simple ones" (Wundt, 1912, p. 151). Job element examining seeks to identify the detailed attributes that differentiate highly effective workers from marginal workers, considering the frequency with which these attributes exist in the applicant population and the trouble that might occur if the identified characteristics are not considered in the selection and training process (Primoff, 1975; Primoff, Note 3). Münsterberg, the founder of applied psychology, also stressed the importance of the element approach. He pointed out that for jobs that are too complex to reproduce in a test as an "undivided whole," it is nec-

essary "to resolve the mental process into its components to test every single elementary function in its isolated form" (Münsterberg, 1913, p. 59). Existing procedures may then be used instead of developing new tests for every job. Put in contemporary terms, job element examining does this by linking the content of the examination to the important requirements of the performance domain.

The job analysis phase relies upon systematic procedures to obtain the judgments of experienced job incumbents and supervisors about critical worker requirements. The requirements are not confined to the cognitive domain; the full range of performance is covered, including affective and psychomotor components. Although the method is comprehensive in its scope, it does not require the assembly of an inventory of tasks as an intermediary step but proceeds directly to an identification of worker requirements.

The test development phase employs job incumbents who, under the guidance of measurement specialists, create the test content based on the identified worker requirements. When possible, the method verifies the linkage with job elements by examining relationships between subtest performance and external criteria of performance. As Humphreys (1975) recommends, indicators of important worker characteristics such as honesty, dependability, initiative, and emotional maturity may be sought. Self-ratings, documented by accounts of life experiences, may provide useful information about such characteristics. As early as 1962, such self-rating data were used to select Mobile Lounge Operators for Dulles Airport (Primoff, Note 4). In job element examining, self-ratings are based on subelements found to be important to the job. The ratings may be used as a research variable and as a selection procedure which may reduce adverse impact on the basis of sex, race, and ethnicity (Primoff, 1980). This approach is quite different from the use of self-ratings based on factors from unrelated studies. Heneman has

pointed out that such uncritical use lacks "theoretical concern with why one might expect SAs [self-assessments] to significantly correlate with the criterion in the first place, or with specification of factors that might condition the size of the correlation. Future research on SA in selection must be guided by stronger theoretical underpinnings. Primoff has provided a start in this direction" (Heneman, 1980, pp. 297-298).

Overview of the Trooper Examination

Now let us turn to the practical job assigned to the authors as consultants to the New York State Police (NYSP) project--that of designing an examining system. We recommended basing all selection decisions on the results of an extensive job analysis. The high cost of examining large numbers of candidates, together with a shift in organizational priorities resulting from a severe fiscal crisis, narrowed the job element portion of the examination down to the Situations Test and the Physical Performance Test. Ideally, the job element examination would also have included empirically weighted self-ratings, an assessment center-type exercise, a background investigation, a medical examination, and a structured oral examination.

The screening process also included administratively determined minimum requirements such as educational level and age. After candidates were ranked on the basis of their scores on the Situations Test and the Physical Performance Test, veterans' credits were added as required by the New York constitution. Finally, candidates received a screening, not based on the job element method, consisting of a pre-employment interview, a medical examination and a background investigation.

Self-rating data based on the critical requirements of the job were collected but not used in screening candidates except as the

candidates themselves chose to use them for self-screening purposes, possibly serving to screen in the more qualified candidates and to reduce the number of less qualified applicants. The candidates were required to support their ratings on four major elements by describing their life experiences, including job experience and training, military service, and avocational activities.

The immense size of the expected applicant pool recurrently surfaced as an issue during technical discussions. This was a concern even when the first examination was given to select New York State Police 60 years ago ("255 Candidates in Test for New York State Police Jobs," 1917). At the time, a physical examination had eliminated more than 1,100 candidates. The remaining 255 candidates were examined on the mental test, which included Münsterberg's measure of powers of observation as well as questions on the candidates' knowledge of horsemanship. In 1975, the concern for applicant population size proved to be a realistic one, for the examination was administered in a period of high unemployment, particularly in large cities such as New York and Buffalo, in which extensive minority group recruiting efforts had been concentrated. A total of 30,500 applications were received, including 4,159 (14%) from minority group members and 1,847 (6%) from women. Over 22,000 candidates appeared to take the 22-item Situations Test, of which 19 items were scored, even though it was anticipated that during the four-year life-expectancy of the eligibility list a maximum of only 800 (3.6%) of the candidates could be hired. Actually only 548 (2.5%) of the applicants were hired.

Meeting Legal and Professional Requirements

At the time the consultant team began its work, less than 1% of the NYSP Trooper population was made

up of minority group members, and the first four women Troopers were beginning their field work after graduation from the police academy. Thus, equal employment opportunity (EEO) concerns were predominant throughout the test development process, including the job analysis, the development of the scoring key, the selection of the test items, and documentation of the validity of the tests.

Job Analysis

The consultants chose to expand the usual six-person panel that, in the job element procedures, establishes the important requirements of the performance domain. A total of 155 NYSP panelists, with a wide range of experience involving coverage of major and minor crimes as well as highway patrol work, participated in generating over 1,400 job element statements. As a result, a data bank of worker requirements has been established and is available to other police agencies (Tordy, Eyde, Primoff, & Hardt, 1976). The panelists represented 5% of all the Troopers and 8% of the supervisors from the nine troops distributed throughout the State. Over half of the panelists represented rural stations, in keeping with NYSP's chiefly rural constituency. (The NYSP does not carry out patrol functions in any of the State's cities but does patrol in the suburbs.) Special groups such as those involved in the 1973 Minority Group Recruiting Detail and the traffic safety details were included. The job element statistic known as the Total Value score, which identifies the most important worker characteristics, was obtained for each requirement, and these scores were analyzed. The Total Value scores for the top 591 job element statements for 134 white males were correlated with the scores obtained for 16 NYSP minority male group members as well as four white women Troopers. The intercorrelations were high and statistically significant ($p < .01$), .87 for minorities and .84 for the women, indicating that white males, women, and the minorities assigned

similar importance to critical requirements of the job. The final results of the job analysis identified 80 minimum requirements along with 223 subelements, or ranking requirements, which defined the specific content of the job that differentiates between effective and marginal workers. These subelements were classified by police panelists under 15 job elements such as: Thoroughness, Good Judgment, and Ability to Communicate Well with Others.

Situations Test

The 1975 Situations Test was not a traditional multiple-choice written test. Test candidates were exposed to an open-book mini-learning situation involving 69 hypothetical police rules. Then they applied these rules using their judgment and common sense to choose which were the best and worst alternative actions that might be chosen from a list of actions ranging from 6 to 13 in number, depending on the requirements of the situations. (Table 1 shows a sample test item with keyed values for each alternative and item statistics from the test administration for four subgroups.) In order to measure critical job requirements rather than merely verbal ability, a low reading level was used, and subject-matter experts (the Job Analysis Detail, see Tordy et al., 1976, p. 11) were asked to describe situations in which Troopers had to make decisions based on their behavioral styles established before training at the police academy. Alternative actions for each situation were to be stated without regard to a logically supportable "best answer" that could be determined by verbal reasoning. The consultants encouraged the subject-matter experts to base the situations on actual occurrences. One such situation dealt with a State Trooper who had stopped a car for speeding. While obtaining license information, the Trooper was assaulted by three motorists from another car. Because the Trooper was assaulted and beaten, there was considerable discussion, with the

TABLE 1

Keyed Values for Situations Test Item 21 and Item Statistics
for Major Subgroups

Alternative Actions		White males (n = 16,431)		Black males (n = 1,363)		Hispanic males (n = 952)		White females (n = 942)	
		Best	Worst	Best	Worst	Best	Worst	Best	Worst
1. Advise the people they will have to leave immediately	-9	23%	1%	29%	2%	24%	2%	19%	2%
2. Interview the farmer to find out if there is any basis in fact giving permission to live on the farmer's land	+1.6	44%	0.5%	32%	0.7%	37%	0.8%	44%	0.3%
3. Do nothing. Advise the farmer they committed a crime	-1.4	1%	63%	2%	56%	2%	58%	2%	59%
4. Call for help and have the people forcefully removed from the premises	-1.2	0.3%	22%	2%	17%	1%	20%	0.2%	25%
5. Call the nearest Social Services agency to see if they can find a place for the families	+1.4	22%	2%	22%	5%	23%	3%	25%	0.8%
6. Arrest the people for trespassing	-1.2	10%	11%	13%	18%	12%	15%	10%	12%
No response		0.1%	0.1%	0.6%	1%	0.3%	0.4%	0.1%	0.3%
Mean Keyed Score (transformed)		5.0		4.5		4.7		5.1	
SD Keyed Score (transformed)		1.3		1.5		1.4		1.2	

Note. The Keyed Value was the mean rating assigned by the Key Value Group using these categories to rate each alternative action: Best + 2; Good + 1; Poor -1; and Worst -2.

conclusion that there was no single "right" answer. Several possible actions were collected, and a sample test item, which was not used in the actual examination, was prepared (Hardt et al., 1981, p. 27).

In the final examination, the key value for each alternative was based on the mean ratings made by nine Troopers and nine Sergeants, who had been nominated by the Zone Lieutenants from the nine NYSP troops on the basis of their superiority on two job elements, Thoroughness and Good Judgment. For each item, the key values provided by these 18 white males were compared with the responses made by nine male minority group members and three white women, resulting in a median correlation of .96 with the minorities and .94 with the women (Table 2). A larger scale analysis (Hardt et al., 1981), based on the 560 alternative responses to 76 situational items, also shows high and statistically significant correlations ($p < .01$) between the responses of the 18 white males and of the nine minorities ($r = .95$) and the women ($r = .89$). Thus, there was high agreement among these groups.

The scoring procedure was designed to give a maximum item score to candidates who selected as best the alternative with the highest key value and as worst the alternative with the lowest key value. Specifically, the item score for each candidate was obtained by subtracting the key value of the worst response from the key value of the best response. Thus, as shown by the mean keyed value in Table 1, a candidate selecting alternative 2

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The Situations Test item pool, amounting to 76 situations, was tried out on three groups of police, including NYSP Troopers and recruits from both a northeastern city and a mid-Atlantic city, for the purpose of studying the impact of the test on minorities and women. Another aim was to reduce the length of the test so that almost all of the NYSP candidates could be expected to complete the final Situations Test, which included 22 situations as well as 69 questions on hypothetical police rules, in a three-hour period.

Since tryout data indicated that minorities, women, and white males might respond differently to the situational items, a plan was drawn up to make a statistical analysis of the Situations Test scores of the candidate population, examining both inter-item relationships and correlations between the test items and the self-ratings of the candidates (cf. Angoff & Ford, 1971). The plan called for studying both within-group interactions of the test items, using two large white samples, and between-group interactions, using the white norm group, a random sample of 3,000 white males, and large minority samples. The analysis focused on determining statistically significant differences in the response patterns of the groups to the situational items.

The first step of the analysis involved determining whether the Situations Test, taken by 22,128 candidates, showed adverse impact on minorities or women according to the four-fifths (80%) rule of thumb described in the 1976 Federal Executive Agency (FEA) Guidelines on Employee Selection Procedures (U.S. Department of Justice, U.S. Department of Labor & U.S. Civil Service Commission, 1976, p. 51753). By this rule, adverse impact normally exists where the selection rate for a racial, ethnic, or sex group is less than 80% of the rate of the group with the highest selection rate. The cutoff score on the Situations Test was set so that the top-scoring 4,310 (19%) of the

TABLE 2

Correlations Between the Mean Keyed Values for Alternatives of Key Value Group
with Minority Group and with Women for 18 Situations Test Items

Situations Test Items	No. of Alternatives in Test Item	Minority Group <u>n</u> = 9	Women <u>n</u> = 3
a	13	.92**	.85**
b	9	.91**	.72*
c	9	.94**	.91**
d	8	.98**	.95**
e	8	.98**	.97**
f	9	.83**	.83**
g	7	.97**	.96**
h	6	.97**	.99**
i	11	.96**	.98**
j	8	.98**	.98**
k	7	.94**	.93**
l	7	.94**	.96**
m	8	.96**	.95**
n	6	.98**	.93**
o	6	.89*	.73
p ^a	7	.94**	.53
q ^a	9	.97**	.65
r ^b	7	.99**	.96**
Median correlation		.96	.94

Note. The Key Value Group consisted of nine white male Troopers and nine white male Sergeants, nominated as superior on Judgment and Thoroughness and representing nine Troops. Minorities and women were nominated by the Minority Group Recruiter and a minority group member of the Job Analysis Detail. Items a thru o and seven other items were in the final test.

^aThis item was dropped from the test after tryout data from a mid-Atlantic city showed possible differences in race and sex response patterns.

^bThis item was dropped because of its racially sensitive content.

* $p < .05$

** $p < .01$

candidates would be eligible to take the Physical Performance Test (PPT). The NYSP established the cutoff score chiefly on the basis of two administrative considerations: the high cost of administering the PPT at four sites throughout the State, and their estimate that only 2,500 of the candidates would be considered in order to fill a maximum of 800 funded vacancies. By examining the statis-

tical impact ratio of the 22-item test for the various subgroups, we found that the pass rate of women to men (86%) did not show adverse impact on the basis of sex. But the test did show adverse impact on minorities. In relation to white male candidates, the pass ratio was 35% for black males and 48% for Hispanic males. A similar set of statistics was calculated for each

of the 22 situations items based on median score differences of subgroups, identifying 11 items that might have different response patterns for minority males and white males.

The 11 items were examined, analyzing item intercorrelations for a random sample of 1,000 white males, a random sample of 1,000 black males, and the total sample of 876 Hispanic males, as contrasted with a white norm group of 3,000 white males (Hardt et al., 1981). For the inter-item analysis, a vector of 21 correlations--each situational item was correlated with the remaining 21 situations--was established for each subgroup, and a statistical test was made to determine whether the correlation of the vectors between the white norm group and the white sample was higher than the correlation between the white norm group and the black or the Hispanic groups. None of the differences between these correlations was statistically significant at the 5% level. However, one of these items--the one with the highest discrepancy between the whites and the blacks--was dropped because the results showed a differential response pattern similar to that found in the mid-Atlantic and NYSP tryout samples.

The second set of statistical tests involved comparing the item responses of the three subgroups with their self-ratings on the subelements, on which the candidates rated themselves on a scale ranging from 2 (do not have or cannot rate) to 6 (outstanding). The vector for the white norm group was compared with the vectors for the white sample, the black sample, and the Hispanic group. This time, statistically significant differences were found between the white and black sample vectors for two of the ten situations under consideration (Item 16: r 's = .28 & .09, $z = 2.07$, $N = 223$, $p < .05$; Item 21: r 's = .36 & .13, $z = 2.58$, $N = 223$, $p < .01$). These two items (item 21 given in Table 1) showed differential validity (Katzell & Dyer, 1977) between the response patterns of large groups of white and black males,

and according to the prearranged plan, were dropped from the final scoring key used for the Situations Test.

By dropping the three test items, we have seen a slight decrease in the adverse impact of the test. The ratio of selection rates for black males rose to 38%, up from 35%, and the ratio for Hispanics rose to 49%, up from 48%. In an earlier paper (Eyde et al., Note 1) we found that the Physical Performance Test (PPT), based on critical worker requirements and prepared by incumbents familiar with superior job performance, shows adverse impact on women candidates. That test, consisting of five pass or fail subtests and four subtests used for ranking candidates, was designed to measure one of the 15 key requirements of the job, Ability to Combine Personal Resources: Mental and Physical. A total of 3,627 candidates, including 90 women, completed the PPT after having passed the screenout section of the test. Ninety-nine percent of the men but only 67% of the women passed the screenout portion of the PPT. For the screenout portion of the PPT, the selection rate for women was only 68% of the selection rate for men, so that adverse impact as defined by the 80% rule of thumb existed.

Documenting the Validity of the Examination

The NYSP documentation effort centered on identifying the content representation of the test in terms of the critical requirements of the performance domain. The test development process was based on the important requirements of the job. In addition, we corroborated the match of test content with job content by identifying statistically significant ($p < .05$) relationships between the test scores of candidates and their self-ratings on 223 subelements. After this step was completed, the job elements under which the subelements were classified were examined. The content of the test, described in terms of the

performance domain, was reported under the key job elements, for example, Thoroughness, Good Judgment, and the Ability to Make Decisions.

Considerable care was exercised in selecting a validation sample for the NYSP project that would meet professional and legal requirements. For example, the FEA Guidelines (U.S. Department of Justice et al., 1976, p. 51755) noted that a research sample used in a criterion-related validity study "should insofar as feasible be representative of candidates normally available in the relevant labor market for the job or jobs in question, and should insofar as feasible include the racial, ethnic and sex groups normally available in the relevant job market." Problems associated with documenting validity evidence using samples of experienced workers have been identified in key court cases, for example, Albemarle Paper Co. v. Moody (1975)¹ and League of United Latin American Citizens v. City of Santa Ana (1976).² Thus our documentation of the validity of the Situations Test included data based on the entire test population for minorities and women, ranging in population size from 928 Hispanics to 1,336 blacks. A similar-sized random sample of 1,000 white males was used in computing the correlations for the white population. Self-ratings, which were documented with examples of life experiences showing competency, were used as the best estimate of job performance that was available for subgroups in the applicant population, which are relatively large, especially in the initial stage of the selection process. Correlations between test scores and self-ratings provide statistical information about high and low scoring candidates which aid in interpreting test results in terms of estimated job performance. Because of the low selection ratio in the NYSP project, with its attendant problems of restriction

of range, it will not be feasible to conduct criterion-related validity studies on a sample representative of the candidate subgroups, using supervisory ratings or more objective measures of job performance. There simply will not be adequate statistical power to support such a study.

The job elements showing a large proportion of subelements with statistically significant correlations between the test scores and the self-ratings for the major minority groups and women as well as for the total applicant population are given in Table 3. (Data for 1,163 women are considered even though the test did not show adverse impact by sex. For a complete listing of all the subelements involved in the correlation matrix, see Tordy et al., 1976, pp. 89-105 and Hardt et al., 1981, Appendix Table 0.)

The analysis of significant correlations focused on subgroups with optimal sample sizes of approximately 1,000 in each subgroup. Thus, it is possible to examine the subelements that showed statistically significant relationships across subgroups. It was found that a total of 68 subelements or 30% of all the subelements showed statistically significant correlations, at the 5% level, for at least three of the four groups, i.e., women, and white, black, and Hispanic males. Not as much practical significance is attached to statistically significant correlations based on the total group, because very low correlations are statistically significant for data collected from over 21,000 candidates.

Job Content Measured by Situations Test

What are the key job elements measured by the Situations Test? Before we answer this let us review

¹Albemarle Paper Co. v. Moody. 422 U.S. 405 (June 25, 1975).

²League of United Latin American Citizens v. City of Santa Ana. 10 F Supp. 873 (March 12, 1976).

TABLE 3

Number of
Job Element

Job Element	n of Subelements	Number of Statistically Significant Correlations at 5% Level			
		All 4 Subgroups		3 or 4 Subgroups	
		(Males [white, black, Hispanic] & Women)	Hispanic] & Women)	(Males [white, black, Hispanic] & Women)	Total Group (N=21,624)
1. Thoroughness	24	11 (46%)	12 (50%)	21 (88%)	
2. A/T Functionality	6	1 (17%)	1 (17%)	6 (100%)	
3. A/T Assurance	12	1 (8%)	3 (25%)	11 (92%)	
4. A/T Make	3	3 (100%)	3 (100%)	3 (100%)	
5. A/T Work	4	2 (50%)	2 (50%)	3 (75%)	
6. Dependability	18	2 (11%)	4 (22%)	14 (78%)	
7. Have Communication	16	4 (25%)	6 (38%)	11 (69%)	
8. A/T Take	7	0 (0%)	1 (14%)	5 (71%)	
9. A/T Combine Personal Resources: Mental and Physical	17	0 (0%)	3 (18%)	13 (76%)	
10. Enthusiasm Toward the Job	8	0 (0%)	0 (0%)	5 (62%)	
11. A/T Act Under Pressure	16	2 (13%)	3 (19%)	12 (75%)	
12. A/T Communicate Well with Others	25	3 (12%)	5 (20%)	18 (72%)	
13. Possess Motivation for the Job	7	1 (14%)	2 (28%)	4 (57%)	
14. Possess Good Judgment	57	8 (14%)	22 (39%)	46 (81%)	
15. Make Decisions Under Pressure --- A/T Act Under Pressure	3	1 (33%)	1 (33%)	2 (67%)	
Subelements	223	39 (17%)	68 (30%)	174 (78%)	

Note: A/T = Ability to. The 223 subelements identify worker characteristics which differentiate between Superior and Barely Acceptable workers (see Primoff, 1975, p. 22 and Tordy et al., 1976). The four subgroups are: white males ($n = 1,000$); black males ($n = 1,336$); Hispanic males ($n = 928$); and females ($n = 1,163$). The white male subgroup consists of a random sample of 1,000 candidates; the other three subgroups represent entire populations. Total score is based on 22 situations items.

A list of the correlations may be obtained from the first author. The data are also available in Hardt, Eyde, Primoff, and Tordy, 1981. The range of obtained statistically significant correlations for the subgroups is:
 $r = .05$ to $r = .23$.

the main concepts used in the job element method. The key job elements are selected on the basis of high Total Value scores (Primoff, 1975). These elements show a very high degree of differentiation between highly superior and marginal workers. Subelements, which also contribute to the identification of superior workers, are selected on a basis of high Item Index scores and of ratings of Barely Acceptable. Subelements provide descriptions of the specific content of the job, functioning as operational definitions of the job elements under which they are classified, and are used for constructing test items. With these concepts in mind, let us examine the statistically significant correlations between the Situations Test scores and self-ratings on the subelements, in order to identify the key job elements measured by the Situations Test (Table 3). By selecting the job elements with the highest proportion of statistically significant correlations between the test and self-ratings, we find that the key job elements defined in terms of subelements--shown to be of considerable importance to success through the job analysis--are: Thoroughness (50%); Possess Good Judgment (39%); and Have Common Sense (38%). Other job elements that have only a small number of subelements classified under them are also well represented: Ability to Make Decisions (100%); and Ability to Work Without Supervision (50%).

The job elements measured by the Situations Test are best understood by the subelements that were classified under them by a panel of police. The following subelements, used as examples for key job elements, each showed statistically significant correlations between the total test scores and self-ratings for the white, black, and Hispanic men and for women (Hardt et al., 1981). Thoroughness is illustrated by the subelements: "Ability to recall all items of knowledge which will control your course of action"; and "Ability to remember basic elements of the law." Judgment is represented by the subelement:

"Ability to apply past experience to solve problems." Common Sense is exemplified by these subelements: "Ability to establish priorities of different tasks" as well as by "Resourcefulness." The job element, Ability to Make Decisions, is measured by these subelements: "Ability to plan" and "Flexibility, for example, be able to respond equally well to different situations." And finally, the job element, Ability to Work Without Supervision, is defined by the subelement: "Ability to read and understand written instructions." Thus, the content of the performance domain helps to describe the job elements measured by the Situations Test.

Let us now review the validity evidence for the ranking portion of the Physical Performance Test (PPT), which was based on four subtests: (a) Police Foot Pursuit Course; (b) Distance Chase; (c) Attic Opening Climb; and (d) Drag Dummy from Vehicle. The self-rating scores, based on the sum of the ratings of the 17 subelements classified under the job element, Ability to Combine Personal Resources: Mental and Physical, were correlated with the scores actually obtained on the PPT. For each sex, the correlations were found to be statistically significant ($r = .32$ for men, $n = 3419$; $r = .42$ for women, $n = 86$). In other words, among both men and women, candidates who received higher scores on the PPT tended to be those who had rated themselves higher on this job element several months prior to taking the PPT. The PPT scores show the highest correlations of both men and women with the single subelement, "Ability to run at your top speed over rough terrain and around obstacles" (r 's = .45 and .42, respectively), and with the four-item subscale, "Speed and agility" ($r = .50$ for men; $r = .45$ for women).

Twelve of the 17 subelements under the job element, Ability to Combine Personal Resources, showed statistically significant relationships between the self-ratings and PPT scores for both sexes. The five subelements that did not show

statistically significant correlations dealt with subelements that the PPT was not designed to measure: vision requirements, manual dexterity, handcuffing a resisting person, and characteristics associated with discouraging physical attack.

The PPT results add 10 more subelements--above and beyond those measured by the written test--to the number of subelements measured by the job element examination. (Two subelements, relating to stamina and sedentary activities, related to both the written and the physical performance tests.) Thus the ranking portion of the examination measures 78 or 35% of the critical subelements of the performance domain.

Economic considerations curbed the comprehensiveness of the job element examination. Had it included the background investigation, and the oral and medical examinations, and empirically weighted self-rating, we might have been able to measure more of the important subelements. For example, these subelements, which on the basis of the job analysis were found to contribute to the identification of highly effective workers (Item Index range: 84-87 [see Primoff, 1975]) might have been measured: "Ability to work as a member of a team"; "Have respect for authority"; and "Have the desire to be a Trooper." We might have also been able to obtain documented evidence that we measured these requirements which were likely to cause trouble if they were left unconsidered (Trouble Likely ratings range: 93-97 [see Primoff, 1975]): "No previous employment in illegal activities"; "No dangerous drug addiction"; and "Ability to maintain emotional stability without use of drugs."

A fiscal crisis faced by the New York State Police prevented further study of the validity of self-ratings, using larger samples of superior police nominated from each troop on the basis of their superiority on the elements, Thoroughness and Good Judgment. A pilot study (Hardt et al., 1981) showed that the mean ratings on 123

subelements made by nine Troopers, nominated for their superiority on these elements, were significantly higher than ratings made by 71 randomly selected NYSP Troopers ($t = 11.34$, $df = 244$, $p < .01$).

The economic recession, as well as the general popularity of the Trooper job, had an impact on the EEO results. For example, despite the fact that in 1975 a large-scale recruiting effort was carried out to attract minorities and women, a substantial increase in the number of white male applicants occurred: over 15,000 more white males applied for the job than in 1973. And yet no more than 800 Troopers might be hired. Out of the 3,534 males on the eligibility list, based on the PPT and the Situations Test, there were only 188 (5%) males who were minority group members. The distribution of these minority group males along the eligibility list did not differ significantly at the 5% level from that of the white males ($\chi^2 = 4.92$, $df = 6$). Therefore, as one moves down the eligibility list and more hiring occurs, the more minority group members there will be. When jobs are in short supply and the job involved is an extremely popular one, there must be a relatively large number of funded vacancies in order to show a substantial increase in the hiring of minority group members.

Veterans' preference points--in this case five or ten points as required by the State constitution--also affect who will be first hired. For example, 99 of the top 100 candidates on the eligibility list had veterans' credits. A similar proportion of white, black, and Hispanic males received veterans' credits (range, 20% to 22%). However, only one of the 45 candidates who received 10 veterans' credits, awarded on the basis of a disability, was a minority group member. Not one of the 778 candidates with veterans' credits was a woman. However, in this particular examination, in which the women were already clustered towards the bottom of the list, their lack of such credits had little practical

impact on their chances of being appointed.

The group of women candidates showed a high attrition rate. A total of 90 women completed the PPT. Only 69% of the women eligible to take the Situations Test appeared for the test, whereas 76% of the men did. Furthermore, only 68% of the women eligible for the PPT appeared, whereas 89% of the men did. Of the minorities eligible to take the Situations Test, 69% took the test, whereas 77% of the white candidates did. On the other hand, 88% of the white candidates eligible for the PPT appeared, whereas 83% of the eligible minorities showed up.

The results of this examination are that only 278 (8%) of the 3,627 candidates on the eligibility list are women or minorities. As a consequence, the Superintendent of Police decided to set aside 25 of the first 100 academy positions for 10 women and 15 minorities. Doing so required a substantial departure from the eligibility list created on the basis of the competitive examining process. As a result, a reverse discrimination class action suit, Ruddy v. Connelie (1977),³ was filed with the New York State Supreme Court (New York State's lower level court) with the main issue being whether the appointment of the women and minorities was in violation of the State constitution. The court concluded that the action of the Superintendent deprived the petitioners of their rights, noting that the "administrative action intended to confer favor upon a few and to exclude others equally qualified under the law, is discriminatory, a denial of equality of privilege and opportunity, and of equal protection of the law" (p. 5). The decision was appealed and upheld (Ruddy v. Connelie, 1978).⁴

On September 8, 1977, the Attorney General of the United States

of America filed a lawsuit against the State of New York and Superintendent Connelie of the New York State Police in the U.S. District Court for the Northern District of New York (USA v. State of New York; Connelie et al., 1979), alleging a "pattern or practice" of discriminatory practices with respect to blacks, Spanish-surnamed Americans, and women under the provisions of Title VII of the Civil Rights Act of 1964, as amended.

During the trial preparation period, defendants' consultant, C. H. Lawshe, prepared an additional corroborative evaluation of the validity of the 1975 New York State Trooper examination. His consultant's report is presented in Appendix A. In it, Lawshe describes a three-category rating scale for evaluating the relevance of the subelements to the test items. The rating category Definitely Required was assigned a weight of 3, Useful a weight of 2, and Not Useful a weight of one. A test item was considered relevant or linked to a subelement if it had an average of 2.0 or larger, i.e., each subelement is either Useful or Required. The weighting system was designed for use with competitively scored tests, in contrast to pass/fail tests in which only essential requirements are considered. Lawshe's (1975) earlier paper, on the other hand, described procedures for computing the Content Validity Ratio (CVR) designed to generate evidence for tests used for the preliminary screening of candidates. The CVR also used a three-category rating system (Essential; Useful But not Essential; or Not Necessary), but considered only Essential ratings in computing the Content Validity Ratio

Lawshe
comment

³Ruddy v. Connelie. Calendar Nos. 61 and 53, New Special Term, February 11, 1977.

⁴Ruddy v. Connelie. No. 31292, New York State Supreme Court, February 23, 1978.

corroborative effort designed to identify subelements which showed statistically significant correlations between test items and self-ratings for at least three subgroups of candidates, including women and black, white, and Hispanic males. Appendix B lists the subelements that met the criteria established for both corroborations. It is interesting to note the kinds of subelements which met both corroborative criteria, such as subelement 1k, "Ability to recall facts" and subelement 15a, "Ability to size up and evaluate a situation." On the other hand, subelements 1x, "Perseverance," and 20b, "Ability to handle alcohol in moderation," did not meet the multimethod criteria (see Hardt et al., 1981).

A twenty-four day trial, which began May 31, 1978 and ended July 21, 1978, was held. Key arguments in the trial and their scientific and philosophical background are described by Eyde, Primoff, and Hardt (Note 5).

On September 6, 1979, the U.S. District Court judge decided the case in favor of the plaintiff (U.S.A. v. State of New York, 1979). The examination, which showed disparate impact, was declared invalid and therefore unlawful, and the defendants were enjoined from using the 1975 examination "as is." The court stated that tasks were not collected in the job analysis, noting that "Although this information may have been within the collective knowledge of members of the job analysis detail, it was not and could not have been brought before members of the psychological profession or the Court for scrutiny and consideration" (U.S.A. v. State of New York, 1979, p. D-24). The court ruled that the use of the content validity strategy alone, without evidence of criterion-related validity, is inappropriate. It found that "many of the subelements identified through the job analysis and upon which the 1975 trooper examination was based are at or near the abstract or unobservable end of the occupational continuum and are psychological processes" (U.S.A. v.

State of New York, 1979, p. D-25), and that the examination's documentation was not in accordance with professional standards or in compliance with Federal Guidelines.

The court (U.S.A. v. State of New York, 1979, p. D-2) noted: "This has not been an easy decision. The factual findings necessitated in this area of law are enough to boggle the minds of even the most educated of psychologists and lawyers." The defendants were found to have "acted in good faith in attempting to eliminate discrimination in its employment practices" (U.S.A. v. State of New York, 1979, p. D-27). The court imposed hiring goals on the New York State Police, noting that "In this case, the public good is the benefit that flows from a State police force reasonably representative of the public it serves" (U.S.A. v. State of New York, 1979, p. D-2). The court observed that 1% of the sworn personnel of the New York State Police were minorities or women and noted that the underrepresentation of these groups produced "startling and eye-catching statistics" (U.S.A. v. State of New York, 1979, p. D-4). The court did not cut off government funding; however the judge awarded 14 months of back pay and retroactive seniority to three individuals. The decision was not appealed to a higher court. Thus judges outside of the U.S. District Court for Northern New York are not bound by this decision.

This decision is in line with the outcome of cases involving U.S.A. as a plaintiff. In recent years, the U.S. Department of Justice has been involved in many police cases. "It has settled, either out of court or through litigation, such cases involving over 20 police departments. All settlements have resulted in hiring and promotion quotas for specific numbers of minorities, including women, to correct past discrimination" (Foster, 1980, pp. 1, 7). Chief U.S. Judge Foley, who decided the case, told a reporter (Freedman, 1980, p. 2) "he believes his order was what the State actually wanted to be told but

was unwilling or unable to do on its own without a push from the Court."

Further Research Directions

As noted earlier, self-ratings may be used as a component of job element examinations. Self-ratings are based on subelements which identify critical job requirements. One of the advantages involved in using self-ratings has been identified by Epstein (1980). He noted that it is possible to obtain valid and replicable information about individuals by using self-ratings which "although themselves [are] made on a single occasion are based on an adequate sample of observations in the past" (p. 801).

The use of self-ratings in analyzing differential response patterns to situational test items has been described. Self-ratings may also be used as a supplement to other examination information. For example, objectively scored self-ratings may be used as an early step in the selection process. These self-ratings should later be reviewed--and if necessary modified--as a result of evidence collected in background investigations and oral examinations. There is some research evidence to support the hypothesis that self-ratings may be used as a selection procedure which reduces adverse impact. An analysis was made of how white and black male applicants rated themselves on 223 subelements that were part of this examination. Using t values (2-tailed, significant at 1% level), it was found that blacks rated themselves higher on 96 subelements, whereas whites rated themselves higher on 52 subelements. It is interesting to note that 71, or 75%, of the 96 subelements on which blacks rated themselves significantly higher than whites were also found to be subelements linked with at least one test item on the basis of an experienced panel of police representing the nine troops and including minorities and one woman. Among the subelements listed in Appendix A, Table B, 71 were found to favor

black males, and 34 favored white males. More research of this kind may provide further evidence that self-ratings may be used to reduce adverse impact while gathering supplemental information on candidates.

Summary

This research and development project sought to combine equal employment opportunity concerns with the need for documenting the validity of the examining process, using the job element method. As a result, we have a better understanding of what is required to perform entry-level police work effectively and have made a data bank of critical worker requirements available for other police agencies to use. The key job elements of Thoroughness, Good Judgment, and Ability to Combine Personal Resources: Mental and Physical, were supported in considerable detail by the specific requirements of the police job. We have shown the link between the important requirements of the performance domain and the content of the job element examination. A procedure for identifying differential response patterns of minority group members was described. In addition, we have shown how the supply and the demand for the police job and fiscal crises affected the application of the job element method and had impact on the hiring of minorities and women.

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APPENDIX A

Report of Expert Witness, C. H. Lawshe, to State of New York
Department of Law, Albany, New York, May 27, 1978

AN ANALYSIS OF
THE CONTENT VALIDITY OF
THE 1975 NEW YORK STATE POLICE EXAMINATION

Submitted to

State of New York
Department of Law
Albany, New York

May 27, 1978

CONSULTING REPORT NO. 70

C. H. Lawshe, Ph.D.
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AN ANALYSIS OF THE CONTENT VALIDITY OF THE
1975 NEW YORK STATE POLICE EXAMINATION

This is a report of your consultant's professional involvement in the evaluation of the 1975 New York State Police Examination.

Initial Contact

Following an initial contact on Feb. 13, 1978, your consultant spent approximately two days examining file materials, the principal item of which was an early draft of what was subsequently published April 1978 as The New York State Trooper Job Element Examination by Hardt, Eyde, Primoff and Tordy. This analysis led to the following opinions:

- The job analysis was conducted in an exceptionally careful and professional manner.
- The test item generation process was well conceived and carefully executed.
- Great care was exercised in the execution of numerous procedures utilized to reject inappropriate items.
- The test scoring procedure was adopted only after intensive consideration of alternate procedures.

Numerous considerations, including the above, led your consultant to conclude that the test is truly job related and, hence, is valid. Subsequent to this initial evaluation your consultant agreed to be retained as an expert witness.

Content Validity Analysis

While your consultant initially concluded that the examination is valid, such conclusion was supported largely by inferences drawn from the job analysis and test construction

procedures utilized. Consequently, he proposed a supplementary validity analysis with the expectation that it would provide data to corroborate the conclusion already reached. The procedure was a content validity analysis and consisted of the following three steps:

1. Convene a Content Evaluation Panel
2. Submit each test item to Panel members and ask for a judgment regarding the relevance of each sub element identified in the job analysis.
3. Summarize the results in order to assess the content validity of the examination.

Each step is dealt with independently in this report.

Content Evaluation Panel

The Panel consisted of 18 job experts with one Trooper and one Sergeant from each of nine Troops. Nine members (including one woman, one male black, and one male Hispanic) were selected by their Troop Commanders on the basis of good judgment and thoroughness; the remaining 11 were nominated earlier by the same process described in the above mentioned report.

Panel Judgments

Each Panelist was provided with one test item at a time, (i.e., police situation or a description of one of the physical performance sub-tests) and a list of the sub-elements included in the job analysis. The following question was asked for the physical performance items:

To what extent does performing this work sample involve the use of the knowledge, skill, ability or other characteristic (KSAO) presented in the sub element?

Three alternative answers were provided:

- A. Definitely required
- B. Useful
- C. Not useful

The question was modified only slightly for the written portion of the examination involving police situations. In total, each of the 18 Panelists examined 205 sub-elements in relation to each of 19 situation test items; he examined the content of 4 physical performance sub-tests in relation to 17 sub-elements.

Summary of Results

Pooled Result. For each test item for each sub-element, individual ratings for 18 Panelists were available. These were pooled by (a) assigning values of 3, 2, or 1 to the response alternatives above and (b) computing the mean or average. The test item was considered relevant or linked to a sub-element if it had an average of 2.0 or larger which is equivalent to the Panel, as a whole, saying that that sub-element is "useful" or "required".

Physical Performance Test. Results of the content validity analysis of the Physical Performance Test are presented in Table 1.* Note that the attic climb sub-test is relevant to 3 sub-elements, the distance dash is relevant to 8, weight pulling 6, and foot pursuit 8. Of the sub-elements examined, linkage with at least one item (or sub-test) was demonstrated for 13 or 77% of the 17.

*Here Table A.

TABLE A

**Subelement -- Physical Performance Test Item Linkage Values With
Average of 2.0 or Greater Assigned by Subject Matter Experts**

<u>Physical Performance Test Subtests</u>					
	<u>Subelements</u>	<u>Attic Climb</u>	<u>Distance Dash</u>	<u>Pull Weight from Vehicle</u>	<u>Police Foot Pursuit</u>
9a	Ability to remove a 160-pound person from a car against his will			X	
9b	Sufficient strength to raise your body through an overhead hole, such as attic entrance	X			
9c	Possess physical strength to control violent persons, a runaway cow horse			X	
9d	Ability to restrain an intoxicated person weighing approximately 200 pounds			X	
9e	Ability to handcuff a resisting person			X	
9h	Ability to function after running 200 yards at your top speed		X		X
9i	Ability to run at your top speed over rough terrain and around obstacles		X		X
9j	Ability to run 1/2 mile while chasing a person		X		X
9k	Stamina to walk long distances over rough terrain		X		X
9l	Ability to work in different types of terrain, for example, mountain or forest		X		X
9m	Ability to make instant change from sedentary activity to strenuous physical activity	X	X	X	X
9n	Good physical coordination	X	X	X	X
9o	Endurance, for example, working long hours or walking five miles in wooded terrain		X		X

Police Situations. Results of the content validity analysis of the written portion of the test are presented in Table 2.* The number of sub-elements for which test items are relevant range from a minimum of 25 to a maximum of 68. Of the sub-elements examined, linkage with at least one test item was demonstrated for 163 sub-elements or 80% of the 205.

Conclusion

In the opinion of your consultant, the data generated by this analysis have demonstrated the content validity of both parts of the examination and serve to corroborate the earlier conclusion that the test is valid.

Respectfully submitted



C.H. Lawshe, PhD
Licensed Psychologist: Georgia, Indiana,
Kentucky & Pennsylvania

May 27, 1978

NOTE: This report is an edited version of a preliminary draft signed and submitted May 25, 1978. No substantial changes have been made; all modifications are purely editorial in nature and were made solely for purposes of clarification.

- CHL

*Here Table B.

TABLE B

Subelement-Situations Test Item Linkage Values with Average of 2.0 or Greater Assigned by Subject-Matter Experts

Subelements	Situations Test Items																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	22			
Thoroughness																						
1a Ability to recall descriptions		x				x					x											
1c Ability to retain number and/or letter sequences						x					x											
1d Ability to maintain systematic records and readily produce them for later use									x													
1e Ability to recognize auto makes and models						x					x											
1f Ability to remember faces			x								x											
1g Ability to recognize, describe and retain mental pictures of vehicles						x					x											
1h Ability to collect data and record it accurately											x											
1j Ability to remember incidents			x							x												
1k Ability to recall facts			x							x												
1l Ability to recall facts when testifying in court											x											
1n Ability to remember basic elements of the law						x					x											
1p Ability to recall all items of knowledge which will control your course of action			x			x					x											
1q Ability to conduct an investigation	x		x					x			x											
1r Powers of observation			x			x					x											
1s Alertness	x		x			x					x											
1t Willingness to follow through or complete investigations			x																			
1u Attention to detail			x								x											
1v Ability to extract information from others	x										x											
1x Perseverance																						
2a Willingness to accept possibility of being killed																						
2b Ability to control your own fear						x						x										
2c Ability to control fear of your own death												x										
2d Ability to control fear of personal injury						x						x										
2f Ability to size up a situation quickly	x		x		x						x											
3a Willingness to accept the responsibilities of your job while on duty																						
3b Willingness to make arrests when warranted			x																			
3c Willingness to accept dangerous assignments												x										
3e Willingness to accept moral and legal responsibility for any legal use of deadly physical force												x										
3f Ability to give orders																						
3g Willingness to accept responsibility for command												x										
3h Willingness to plan an investigation																						
3i Willingness to stand by decisions																						

Note. The subject-matter experts did not have the job elements such as Thoroughness available to them when they made their ratings. Job elements are listed for the convenience of the reader.

TABLE B (Continued)

Subelements		Situations Test Items																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	22			
3j	Ability to organize work activities																						
3k	Aggressiveness			x			x		x				x					x					
3l	Leadership ability								x						x			x					
4a	Self-reliance																						
4b	Flexibility, for example, be able to respond equally well to different situations	x	x				x		x				x	x		x		x					
4c	Ability to plan	x	x	x	x		x						x	x		x		x	x				
5a	Ability to work alone			x																			
5c	Ability to remember rules and regulations	x		x	x	x	x	x	x	x	x		x	x		x				x			
6a	Ability to work as a member of a team																						
6b	Ability to work with peers	x	x			x		x	x				x	x	x		x			x	x		
6c	Good employment record such as good attendance, getting along with co-workers and doing your job					x							x										
6d	Promptness in response to complaints																						
6e	Truthfulness																						
6f	Trustworthiness																						
6i	Willingness to work odd hours such as shifts, nights and holidays	x					x	x	x	x					x								
6j	Ability to work under adverse conditions, for example, hungry, wet or tired																						
6l	Ability to work long hours without sleep																						
6n	Tolerance for extremes of weather																						
6p	Self-discipline	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x				
Have Common Sense																							
7a	Willingness to mask prejudices and enforce the law objectively	x					x	x	x	x		x							x				
7b	Respect for people's property																						
7d	Ability to maintain attention while driving								x														
7e	Ability to release emotional pressures in a manner that is socially acceptable			x		x							x										
7f	Ability to establish priorities of different tasks																						
7g	Resourcefulness	x																					
7h	Ability to organize	x	x		x																		
7i	Ability to keep job criticism within the job																						
7j	Ability to be discreet																						

TABLE B (Continued)

Subelements	Situations Test Items																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	22			
7k Ability to identify and separate extraneous information													x									
7l Ability to use tact	x	x		x	x				x	x			x	x			x		x			
7n Ability to instruct the public		x																				
7o Ability to draw valid conclusions from minimum information			x					x				x	x	x			x		x			
7p Imagination													x				x		x			
Ability to Take Orders																						
8a Respect for authority					x															x		
8b Ability to function in a semi-military environment					x															x		
8c Willingness to conform to existing standards of the job					x		x	x						x						x		
8d Ability to work within the system					x		x	x												x		
8e Ability to work with superiors					x	x														x		
8f Military bearing, that is, a commanding appearance																						
8g Ability to accept discipline		x																				
Enthusiasm Toward the Job																						
10b Willingness to sacrifice, such as working weekends and holidays or being separated from your family for long periods of time																				x		
10c Ability to accept the responsibilities of the position of Trooper while off duty			x						x	x												
10g Ability to create good public relations while off duty										x												
6r Ability to apply yourself to the job	x	x			x			x				x	x	x	x	x	x	x	x	x		
Ability to Act Under Pressure																						
11a Ability to control your emotion in the presence of gore such as in a serious automobile accident		x																				
11e Ability to withstand physical abuse, such as being pushed, struck or exposed to adverse weather conditions																						
11f Ability to hide nervousness													x				x					
11g Ability to speak clearly on the telephone while under stress													x									
11i Ability to do more than one thing at a time, such as a busy Trooper on desk duty taking complaints, making assignments and using station radio console		x											x				x					
11j Ability to control your emotions involving crimes against yourself									x											x		

^a Subelement was misclassified under Dependability on the rating form.

TABLE B (Continued)

Subelements	Situations Test Items																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	22			
11k Ability to control emotions involving crimes against a close friend																						
11l Ability to control emotions while investigating violent sex crimes and crimes of passion			x																			
11m Ability to ignore verbal abuse from the public										x							x					
11n Ability to control emotions involving crimes against your family																						
11o Ability to concentrate in the presence of distracting influences																						
11p Freedom from fear of failure																						
<u>Ability to Communicate Well With Others</u>																						
12a Ability to express yourself orally																						
12c Have good command of the English language in its written and spoken form																						
12d Ability to be a good listener																						
12e Tact or courtesy																						
12f Friendliness																						
12h Ability to control voice level																						
12j Ability to calm agitated persons																						
12k Ability to conduct interviews with complainants, witnesses, victims of a crime or defendants																						
12n Persuasiveness																						
12o Ability to relate professionally with members of either sex																						
12p Ability to work with public																						
12q Ability to solicit information over the telephone																						
12r Ability to give orders in public																						
12s Ability to work with a partner																						
12t Ability to command respect from the public																						
12u Ability to motivate others																						
12v Ability to instill confidence																						
12w Ability to communicate effectively with persons from different socioeconomic classes																						
12x Good personality																						
12y Empathy																						
<u>Possess Motivation for the Job</u>																						
13a Willingness to provide a public service to the people of your community in a law enforcement capacity																						
13c Pride in the police profession																						
13f Willingness to perform menial tasks																						

TABLE B (Continued)

Subelements	Situations Test Items																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	22			
Judgment--A																						
14a Ability to recognize and deal with human emotions	x			x						x		x	x	x		x	x					
14b Ability to relate to family disputes																		x				
14c Ability to recognize and deal with an agitator in a crowd										x							x					
14e Ability to give constructive criticism to others														x								
14f Ability to recognize others' weaknesses													x	x			x					
Judgment--B																						
15a Ability to size up and evaluate a situation																						
15b Ability to recognize potential traffic hazards																						
15c Ability to recognize potential dangers at an accident scene																						
15d Ability to recognize potential weapons																						
15e Ability to recognize suspicious actions																						
15f Ability to apply past experience to solve problems																						
15g Basic investigative ability																						
15h Ability to detect unusual occurrences																						
15i Ability to interpret information, either spoken or written in English																						
15k Ability to recognize discrepancies in oral communications																						
15l Ability to use sources of information																						
15m Ability to determine truthfulness																						
15n Suspicious nature, that is, do not accept things at face value																						
Judgment--C																						
16a Ability to determine safe speed in response to an emergency call																						
16b Ability to control your own aggressiveness while operating a motor vehicle																						
16c Ability to drive defensively to the point of anticipating improper actions of other drivers and use evasive action to avoid an accident																						
16d Ability to drive at high speeds under poor road and weather conditions																						
16e Good driving ability																						
16f Ability to maintain emotional stability while driving at high speeds																						
16g Good attitude toward other users of the highway																						
16h Ability to overcome fatigue and continue safe operation of a car																						

TABLE B (Continued)

Subelements	Situations Test Items																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	19	22			
Judgment—D																						
17a Ability to maintain confidentiality																						
17b Ability to put aside fraternal ties while performing duties							x	x														
17c Ability to handle personal family life to avoid job conflict																						
17d Maturity																						
17e Ability to avoid having disreputable associates																						
17f Ability to maintain a good reputation in the community																						
17g Good moral character																						
17h Freedom from repeated automobile accidents which were your fault																						
Judgment—E																						
18a Ability to enforce the law fairly and equally towards all segments of the population																						
18b Ability to accept people as individuals																						
18c Ability to control your own aggressiveness																						
18d Ability to remain objective																						
18e Ability to avoid abuses of your position, such as giving or receiving personal favors																						
18f Ability to respect the rights of others																						
18g Ability to resist intimidation																						
18h Courage to resist political pressure																						
Judgment—F																						
19a Ability to react correctly to a dangerous situation																						
19b Ability to size up a situation and take or initiate proper action																						
19d Ability to use caution in a dangerous situation																						
19e Ability to recognize your physical limitations so that you will not place yourself in a situation where injury or failure is a certainty																						
19f Ability to respond to intuitions with action																						
Judgment—G																						
20a Patience																						
20d Ability to judge time and distance, for example, approximate five minutes or 100 yards																						
Ability to Make Decisions Under Pressure/Ability to Act Under Pressure																						
21a Self-confidence																						
21b Freedom from fear of large crowds																						
21c Versatility																						

APPENDIX B

A Comparison of Two Corroborations of the Content Validity of the 1975 Examination

Subelements Linked to Situations Test and Physical Performance Test by
Both the Subject-Matter Experts and Statistically Significant
Correlations Between the Test Scores and Self-ratings by Candidates on
Subelements

-
- 1k Ability to recall facts
 - 1n Ability to remember basic elements of the law
 - 1p Ability to recall all items of knowledge which will control your
course of action
 - 2f Ability to size up a situation quickly
 - 3i Ability to stand by decisions
 - 4a Self-reliance
 - 4b Flexibility, for example, be able to respond equally well to different
situations
 - 4c Ability to plan
 - 5a Ability to work alone
 - 6f Trustworthiness
 - 7a Willingness to mask prejudices and enforce the law objectively
 - 7f Ability to establish priorities of different tasks
 - 7g Resourcefulness
 - 7j Ability to be discreet
 - 7l Ability to use tact
 - 8c Willingness to conform to existing standards of the job
 - 9a Ability to remove a 160 pound person from a car against his will
 - 9b Sufficient strength to raise your body through an overhead hole,
such as attic entrance
 - 9c Possess physical strength to control violent persons, a runaway
cow or horse
 - 9d Ability to restrain an intoxicated person weighing approximately
200 pounds
 - 9h Ability to function after running 200 yards at your top speed
 - 9i Ability to run at your top speed over rough terrain and around
obstacles
 - 9j Ability to run 1/2 mile while chasing a person
 - 9k Stamina to walk long distances over rough terrain
 - 9l Ability to work in different types of terrain, for example, mountain
or forest
 - 9m Ability to make instant change from sedentary activity to strenuous
physical activity
 - 9n Good physical coordination
 - 9o Endurance, for example, working long hours or walking five miles in
wooded terrain

APPENDIX B -- (Continued)

- 11i Ability to do more than one thing at a time, such as a busy Trooper on desk duty taking complaints, making assignments and using station radio console
- 12a Ability to express yourself orally
- 12c Have good command of the English language in its written and spoken form
- 12n Persuasiveness
- 13a Willingness to provide a public service to the people of your community in a law enforcement capacity
- 13c Pride in the police profession
- 14a Ability to recognize and deal with human emotions
- 15a Ability to size up and evaluate a situation
- 15f Ability to apply past experience to solve problems
- 15g Basic investigative ability
- 18a Ability to enforce the law fairly and equally towards all segments of the population
- 18e Ability to avoid abuses of your position, such as giving or receiving personal favors
- 18g Ability to resist intimidation
- 19b Ability to size up a situation and take or initiate proper action
- 21c Versatility

Note. Subelements are listed if: (1) rated on the average "useful" or better by subject-matter experts for four or more of 19 situations; and (2) statistically significant correlations with the Situations Test were obtained for three or more applicant subgroups, including white males, black males, Hispanic males, and women (see Table 0 in Hardt et al., 1978). For the Physical Performance Test subelements are listed if: (1) rated on the average "useful" or better by subject-matter experts for one or more of the four ranked subtests; and (2) statistically significant correlations with the Physical Performance Test were obtained for both men and women (see Table IV-14, Hardt et al., 1978).

